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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,627	04/16/2002	Ah Hwee Tan	P21834	7768

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EXAMINER

COUGHLAN, PETER D

ART UNIT	PAPER NUMBER
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2121

DATE MAILED: 05/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/049,627

Applicant(s)

TAN ET AL.

Examiner

Peter Coughlan

Art Unit

2121

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_\_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2002 and 22 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5,7,8 and 17 is/are allowed.
- 6) ☒ Claim(s) 1-4,6,10-12,15,16 and 18 is/are rejected.
- 7) ☒ Claim(s) 9,13 and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 22 May 2002
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

1      Claims 1-18 have been examined

***Priority***

2      Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. PCT/SG99/00089, filed on 08/25/1999.

***Specification***

***Minor Objections***

3      Claim 4. The acronym ARAM should be spelled out to indicate what it is.

4      Claim 9. The word 'or' divides this claim into two halves. The second portion refers to a 'said destination' which is considered to be a typographical error.

5      Claim 14. There is no word 'mis-directed'. This appears to be a typographical error with the correct spelling being 'misdirected'.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6      Claims 1,2,3,4,6,10,11,12,15,16,and 18 are rejected under 35 U.S.C. 101 because the language of the claims raises a question as to whether the claim is

directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101. The word 'apparatus' used in all these claims does not link the abstract concept to the technological art, environment or machine. It is suggested the applicant use the phrase "computer implemented" in the preamble to describe the invention since this would cure the deficiency.

7      Claims 13 and 14 are rejected under 35 U.S.C. 101 because the term "system administrator" is considered to be a human being. Human beings are not considered to be statutory subject matter. If "system administrator" is referring to computer code then these claims are rejected as being an abstract idea not tied to the technological arts.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8      Claim 18 recites the limitation "threshold" in claim 13 which is dependent to claim 5, which is dependent to claim 1. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9 Claims 1,5,6,7,10,11,12,16, 17 are rejected under 35 U.S.C. 102(e)

AO  
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((hereinafter referred to as Register)) being clearly anticipated by Register et al.,  
U.S. 5371807  
A

Claim 1.

Register discloses a document classification apparatus comprising feature extraction means (item 32) for extracting of features from a document (column 4, lines 62-64). The input text is considered to be the document.

and a classifier (items 34, 36 and 38) operable on the extracted features to process the document in a knowledge acquisition mode in which the association of a classification with the document is added incrementally to a knowledge base (see also column 3, lines 37-52)

or in a document classification mode in which the classifier, using the knowledge base, determines a predicted classification for the document, (column 4, lines 40-45)

the classifier being switch able between modes under user control.  
(column 11, lines 54-68)

Claim 5.

Register discloses a router arranged to route the document to one of a plurality of destinations in dependence upon the classification. ( column 15, lines 41-45 This passage is considered to disclose a router since a router must be present in order for the documents to be routed).

Claim 6.

Register discloses that the classification has associated therewith a confidence value (column 5, lines 48-50). Register refers to the "confidence score" as a "similarity score".

Claim 7.

Register discloses a router arranged to route the document to one of a plurality of destinations in dependence upon the classification, wherein the classification has associated therewith a confidence value is comparable to a threshold, the router being arranged to make an automatic routing or manual decision in dependence upon the comparison. (column 15, lines 40-59)

Claim 10.

Register discloses that the features are formed into a feature vector for input to the classifier. (column 4, lines 64-66) A vector is consider to be the same as the features since it is the machine operable version of a feature.

Claim 11.

Register discloses that the features comprise classification associated words and phrases which may appear in the document. ( see column 4, lines 58-62)

Claim 16.

Register discloses an apparatus that is operable in knowledge acquisition mode to process a plurality of training documents with associated classifications as a batch. (column 6, lines 12-13)

Claim 17.

Register discloses a document classification apparatus comprising:

Feature extraction means for extracting a plurality of features from a document, (column 4 lines 54-62),

a classifier (34, 36 and 38 ) operable, using a knowledge base, to determine from the features a predicted classification for the document the classification having a confidence value associated therewith ( column 5, lines 49-56);

a router arranged to compare the confidence value to the threshold and make a decision to route the document automatically to one of a plurality of destinations or to a destination for manual routing in dependence upon the comparison, ( column 15, lines 40-59).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10 Claims 2, 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Register in view of Ah-Hwee Tan, "Adaptive Resonance Associative Map", Neural Networks Vol. 8, No.3, pp437-446, 1995 (hereinafter referred to as Tan ).

Claims 2 and 4.

As set forth above, Register discloses the claimed invention with the exception of a adaptive resonance theory system (ART) and adaptive resonance associative map (ARAM). Tan teaches the use of an ART for the purpose of fast learning guaranteed perfect storage, full memory and noise immunity. It should



be noted that ARAM is the combination of two ART systems therefore the use of an ARAM inherently includes the use of at least one ART. It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the classifier of Register with an ARAM system for the purpose of fast learning, guaranteed perfect storage, full memory capacity and noise immunity as taught by Tan.

Claim 3.

As set forth above Register discloses the device of applicants with the exception of an ARTMAP system. Tan teaches the use of an ARTMAP system is an art equivalent of an ARAM, see Tan column 2, lines 11-13. It would have been obvious to a person having ordinary skill in the art at the time of the applicant's invention to modify Register to include a ARTMAP system since it is an art equivalent of an ARAM as taught by Tan.

11      Claims 8 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Register in view of Ah-Hwee Tan and Teo C; Learning User Profiles for Personalized Information Dissemination. Neural Networks Proceedings, 1998. IEEE World Congress on Computational Intelligence, the 1998 IEEE International Joint Conference on Volume 1, 4-9 May 1998 Pages(s) 183-188 vol 1. (hereinafter Profile Learning)

Register discloses a classifier similar to the applicants with the exception of an adjustable threshold. In paragraph 4.2.3, "Profile Learning" teaches the

user can send feedback (adjust the threshold) to different categories of news stories for the purpose of customizing the documents sent to the user, page 183 column 2, lines 23-25. It would have been obvious to the person having ordinary skill in the art at the time of the applicant's invention to modify the classifier of Register to include adjustable thresholds as taught by Profile Learning for the purpose of customizing the documents sent to the user.

Claim 9 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Register in view of Alam (U.S. 6104500).

Register discloses a classifier but does not disclose a system administrator responsible for manual routing (column 10, lines 26-34). Alam teaches the use of a system administrator for routing documents manually for the purpose of insuring that documents that cannot be classified electronically are forwarded to the correct person. It would have been obvious to a person being ordinary skill in the art at the time of applicant's invention to modify the classifier of Register to include a system administrator to ensure that all documents are properly routed.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Register in view of Register M.S. and Kannan, N.; A Hybrid Architecture for Text Classification, Tools with Artificial Intelligence, 1992, TAI '92, Proceedings, Fourth International Conference on 10-13 Nov. 1992 Page(s) 286-292 (hereinafter Text Classification)

Register discloses a classifier substantially the same as applicant with the exception of the system administrator being connected to the feature extraction means and classifier, the arrangement being such that a said mis-directed document, in association with an actual classification supplied by the system administrator, is processed in knowledge acquisition mode to add the association of the actual classification with the mis-directed document to the knowledge base. Text Classification at Section 2.5 "Relevance feedback learning component", last paragraph teaches a method for adjusting the keyword weights (knowledge base) for the purpose of improving routing accuracy. It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the classifier of Register as taught by Text Classification for the purpose of improving accuracy.

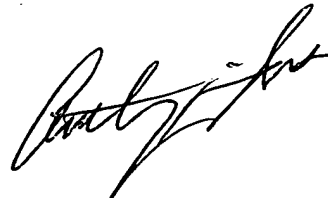
Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Register in view Ah-Hwee Tan "Cascade ARTMAP Integrating Neural Computation and Symbolic Knowledge Processing", Neural Networks, IEEE Transactions on Volume 8, Issue 2, March 1997 Page(s):237-250 (hereinafter Cascade ARTMAP).

Register, as set forth above, discloses a classifier similar to applicants with the exception of the apparatus being operable to perform rule insertion in the knowledge acquisition mode in which a plurality of features are input by a user to the classifier together with a classification with which the features are associated. Cascade ARTMAP teaches that <sup>R</sup>A<sub>T</sub>MAP systems recognized categories learned

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by the category nodes are compatible with rules that link antecedents to consequents. Therefore rules can be inserted into an ARTMAP for improved accuracy and efficiency. It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to have modified Register to include a rule based system for the purpose of improved accuracy and efficiency.

Any inquiry concerning this communication should be directed to Peter Coughlan at telephone number (571)272-5990, or to Anthony Knight, Supervisory Patent Examiner, Technology Center 2100 at telephone number (571)272-3687.

A handwritten signature in black ink, appearing to read 'Anthony Knight', is positioned above the printed name.

**Anthony Knight**  
**Supervisory Patent Examiner**  
**Group 3600**